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Volkhard Maess

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EXAMINER

MILIA, MARK R

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/868,827	Applicant(s) MAESS ET AL.	
	Examiner Mark R. Milia	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 17-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-20, 22-23, and 25-42 is/are rejected.
- 7) ☒ Claim(s) 21 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/20/01</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Oath/Declaration***

1. Examiner requests an additional copy of the Oath and Declaration be provided, as the Office has seemed to misplace the first provided copy during scanning procedures.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 25, 35, and 40-42 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4855766 to Suzuki.

Regarding claim 17, Suzuki discloses a method for operation of an electrophotographic printer or copier device in which an optical character generator illuminates a photoconductor with at least one light source, comprising the steps of: generating light encoding data from print data of a print image, the light encoding data respectively contain one of at least three different light encoding values that are allocated to different reference illumination energy values (see Figs. 2 and 4 and column 2 lines 9-20, 27-38, and 45-51, reference teaches a spectrum of light quantities used to form a latent image on a photoconductor which is further broken down into three

categories of light quantity as described in column 3 line 20-column 4 line 15 and therefore anticipates the claim), utilizing the reference illumination energy values for printing when the photoconductor has a predetermined reference discharge characteristic indicating a relationship of illumination energy and potential on the photoconductor (see column 2 lines 45-51 and column 3 lines 13-18), considering a discharge characteristic indicating the relationship of illumination energy and potential on the photoconductor in a balancing event in a definition of corrected illumination energies (see column 2 line 45-column 4 line 15), and determining in a balancing event the corrected illumination energy to be emitted by the character generator respectively for each light encoding value dependent on a deviation of the discharge characteristic from the reference discharge characteristic given a potential that belongs to the reference illumination energy employed according to the reference discharge characteristic given the respective light encoding value, wherein a value of the respective corrected illumination energy deviates all the more from a value of the reference illumination energy belonging to the same light encoding value the greater the deviation of the characteristics from one another is given the potential belonging to the respective light encoding value according to the reference discharge characteristic (see column 3 line 21-column 4 line 15).

Regarding claim 42, Suzuki discloses an electrophotographic printer or copier device, comprising an optical character generator that illuminates a photoconductor with at least one light source (see column 2 lines 9-20), a print data unit that generates light encoding data with at least three different light encoding values from the print data of a

print image, the light encoding values being allocated to different reference illumination energies, the reference illumination energy values being employed for printing when the photoconductor has a prescribed reference discharge characteristic indicating the relationship of illumination energy and potential on the photoconductor (see column 2 lines 9-20, 27-38, 45-51 and column 3 line 20-column 4 line 15), a drive unit for driving the light source dependent on the light encoding data (see column 2 lines 27-38), and a correction unit in which a discharge characteristic indicating a relationship between illumination energy and potential on the photoconductor is taken into consideration in a determination of corrected illumination energies, the correction unit determining the corrected illumination energy for each light encoding value so that a value of a respective corrected illumination energy deviates all the more from a value of a reference illumination energy belonging to a same light encoding value the greater a deviation of the characteristic from the reference discharge characteristic is given a potential that belongs to the reference illumination energy employed for the respective light encoding value according to the reference discharge characteristic; said drive unit driving the light source dependent on the corrected illumination energies (see column 3 line 20-column 4 line 15).

Regarding claim 25, Suzuki discloses the method discussed in claim 17, and further discloses taking the discharge characteristic into consideration in at least one regulating or control event, including determining the corrected illumination energy for the light encoding value such that a potential predetermined for the light encoding value or a potential lying close to this potential arises on the photoconductor given an

illumination according to the light encoding value and an appertaining corrected illumination energy (see column 3 line 21-column 4 line 15).

Regarding claim 35, Suzuki discloses the method discussed in claim 17, and further discloses automatically implementing the balancing event (see column 3 line 19-column 4 line 15, reference teaches the balancing event is automatically controlled by the control unit).

Regarding claim 40, Suzuki discloses the method discussed in claim 17, and further discloses prescribing a potential value that should occur on the photoconductor given illumination according to the respective light encoding value for each light encoding value (see column 2 lines 45-65 and column 3 line 20-column 4 line 15) and utilizing the illumination energy value determined by the discharge characteristic given the potential predetermined for the light encoding value as the corrected illumination energy for a light encoding value (see column 3 lines 13-18).

Regarding claim 41, Suzuki discloses the method discussed in claim 17, and further discloses utilizing the reference illumination energy value prescribed for the appertaining light encoding value for the determination of a corrected illumination value (see column 3 lines 13-18).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-19, 22, 26-34, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claims 17 and 35 above, and further in view of U.S. Patent No. 5124732 to Manzer et al.

Regarding claim 18, Suzuki does not disclose expressly determining one correction parameter for each of said light encoding values, and calculating the corrected illumination energy values for the appertaining light encoding values with said correction parameters.

Manzer discloses determining one correction parameter for each of said light encoding values, and calculating the corrected illumination energy values for the appertaining light encoding values with said correction parameters (see column 8 lines 7-48).

Regarding claim 19, Suzuki does not disclose expressly acquiring the discharge characteristic completely or in points, prescribing a photoconductor potential for each of said light encoding values, and determining the corrected illumination energy respectively from the discharge characteristic for said light encoding value for the predetermined potential.

Manzer discloses acquiring the discharge characteristic completely or in points (see column 4 lines 47-55, column 7 lines 46-56, and column 7 line 66-column 8 line 22), prescribing a photoconductor potential for each of said light encoding values, and determining the corrected illumination energy respectively from the discharge

characteristic for said light encoding value for the predetermined potential (see column 4 lines 47-55, column 7 lines 46-56, and column 8 lines 36-48).

Regarding claim 22, Suzuki does not disclose expressly determining said discharge characteristic completely or in points, prescribing a photoconductor potential for at least one of said light encoding values, determining said corrected illumination energy from the discharge characteristic for the predetermined potential, and determining the corrected illumination energies for other light encoding values by estimates.

Manzer discloses determining said discharge characteristic completely or in points (see column 7 line 66-column 8 line 4), prescribing a photoconductor potential for at least one of said light encoding values (see column 8 lines 7-10), determining said corrected illumination energy from the discharge characteristic for the predetermined potential (see column 8 lines 7-22), and determining the corrected illumination energies for other light encoding values by estimates (see column 8 lines 36-48).

Regarding claim 26, Suzuki does not disclose expressly considering a development characteristic indicating a current relationship of potential on the photoconductor and toner deposit in said determining step of the corrected illumination energies and/or of further printing parameters.

Manzer discloses considering a development characteristic indicating a current relationship of potential on the photoconductor and toner deposit in said determining step of the corrected illumination energies and/or of further printing parameters (see column 8 lines 49-68).



Regarding claim 27, Suzuki does not disclose expressly determining further printing parameters, including considering a development characteristic indicating a current relationship of potential on the photoconductor and toner deposit.

Manzer discloses determining further printing parameters, including considering a development characteristic indicating a current relationship of potential on the photoconductor and toner deposit (see column 8 lines 49-68, column 9 lines 6-23 and 27-34, and column 9 line 58-column 10 line 10).

Regarding claim 28, Suzuki does not disclose expressly applying a plurality of toner marks with different rastering and acquiring the toner deposits in the region of the toner marks.

Manzer discloses applying a plurality of toner marks with different rastering and acquiring the toner deposits in the region of the toner marks (see column 10 lines 19-61).

Regarding claim 29, Suzuki does not disclose expressly wherein said step of acquiring utilizes a sensor to acquire the toner deposit in the region of the toner mark in integrating fashion.

Manzer discloses wherein said step of acquiring utilizes a sensor to acquire the toner deposit in the region of the toner mark in integrating fashion (see column 9 lines 6-23 and 41-57 and column 10 lines 26-31).

Regarding claim 30, Suzuki does not disclose expressly applying at least one toner mark onto one of the photoconductor and a carrier material utilizing the corrected illumination energies, acquiring a toner deposit in a region of the toner mark, and

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prescribing at least one further printing parameter that influences at least one of a development process and an illumination process dependent on the toner deposit.

Manzer discloses applying at least one toner mark onto one of the photoconductor and a carrier material utilizing the corrected illumination energies (see column 9 lines 22-57 and column 10 lines 19-61), acquiring a toner deposit in a region of the toner mark (see column 9 line 58-column 10 line 10), and prescribing at least one further printing parameter that influences at least one of a development process and an illumination process dependent on the toner deposit (see column 9 line 58-column 10 line 10).

Regarding claim 31, Suzuki does not disclose expressly wherein said step of acquiring is by one of an optical sensor and a capacitive measuring sensor.

Manzer discloses wherein said step of acquiring is by one of an optical sensor and a capacitive measuring sensor (see column 9 lines 6-23, 27-34, and 41-57 and column 10 lines 26-31).

Regarding claim 32, Suzuki does not disclose expressly applying a plurality of toner marks with different rastering and acquiring the toner deposits in the region of the toner marks.

Manzer discloses applying a plurality of toner marks with different rastering and acquiring the toner deposits in the region of the toner marks (see column 10 lines 19-61).

Regarding claim 33, Suzuki does not disclose expressly wherein said step of acquiring utilizes a sensor to acquire the toner deposit in the region of the toner mark in integrating fashion.

Manzer discloses wherein said step of acquiring utilizes a sensor to acquire the toner deposit in the region of the toner mark in integrating fashion (see column 9 lines 6-23 and 41-57 and column 10 lines 26-31).

Regarding claim 34, Suzuki does not disclose expressly considering only a section of at least one of the illumination characteristic and the development characteristic.

Manzer discloses considering only a section of at least one of the illumination characteristic and the development characteristic (see column 9 line 58-column 10 line 10).

Regarding claim 39, Suzuki does not disclose expressly wherein said step of automatically implementing is performed demand of an operator.

Manzer discloses wherein said step of automatically implementing is performed demand of an operator (see column 6 lines 55-64 and column 10 lines 40-44, reference teaches an operator interface, "control panel", which allows the operator to input instructions and parameters and therefore is analogous to the claimed element).

Suzuki & Manzer are combinable because they are from the same field of endeavor, electrophotographic printing with regulation of print parameters to ensure optimum print quality.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the correction method of Manzer with the system of Suzuki.

The suggestion/motivation for doing so would have been to provide and electrophotographic printer which generates optimum print quality regardless of fluctuations and changing operation conditions (see column 2 lines 36-46 of Manzer).

Therefore, it would have been obvious to combine Manzer with Suzuki to obtain the invention as specified in claims 18-19, 22, 26-34, and 39.

Claims 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Manzer as applied to claims 19 and 22 above, and further in view of U.S. Patent No. 5367361 to Henderson.

Suzuki and Manzer do not disclose expressly utilizing a mathematical model for the discharge characteristic of the photoconductor.

Henderson discloses utilizing a mathematical model for the discharge characteristic of the photoconductor (see column 3 lines 18-26 and 51-64, reference teaches a formula for calculating the discharge ratio of the printing elements and is therefore analogous to the claim).

Suzuki, Manzer & Henderson are combinable because they are from the same field of endeavor, electrophotographic printing regulating and utilizing charge potentials of print elements.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the mathematical model concept of Henderson with the system of Suzuki and Manzer.

The suggestion/motivation for doing so would have been to provide a mathematical basis for the correction of charge potential of illumination elements.

Therefore, it would have been obvious to combine Henderson with Suzuki and Manzer to obtain the invention as specified in claims 20 and 23.

Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Manzer as applied to claim 35 above, and further in view of U.S. Patent No. 5057867 to Ishigaki et al.

Regarding claim 36, Suzuki and Manzer do not disclose expressly wherein said step of automatically implementing is performed after a printer or copier device is turned on.

Ishigaki discloses wherein said step of automatically implementing is performed after a printer or copier device is turned on (see column 5 lines 1-6).

Regarding claim 37, Suzuki and Manzer do not disclose expressly wherein said step of automatically implementing is performed after longer printing pauses.

Ishigaki discloses wherein said step of automatically implementing is performed after longer printing pauses (see column 2 lines 43-49, column 5 lines 24-37, and column 11 line 46-column 12 line 17).

Regarding claim 38, Suzuki and Manzer do not disclose expressly wherein said step of automatically implementing is performed after longer printer operation.

Ishigaki discloses wherein said step of automatically implementing is performed after longer printer operation (see column 2 lines 43-49, column 5 lines 24-37, and column 11 line 46-column 12 line 17).

Suzuki, Manzer & Ishigaki are combinable because they are from the same problem solving area, providing high quality images regardless of changes in conditions.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the correction method for inactivity of a printer with the system of Suzuki and Manzer.

The suggestion/motivation for doing so would have been to provide optimum quality images regardless of changes in conditions (see column 1 lines 32-49 of Ishigaki).

Therefore, it would have been obvious to combine Ishigaki with Suzuki and Manzer to obtain the invention as specified in claims 36-38.

***Allowable Subject Matter***

3. Claims 21 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. To further show state of the art please refer to Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Milia whose telephone number is (703) 305-1900. The examiner can normally be reached M-F 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached at (703) 305-4712. The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MRM

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